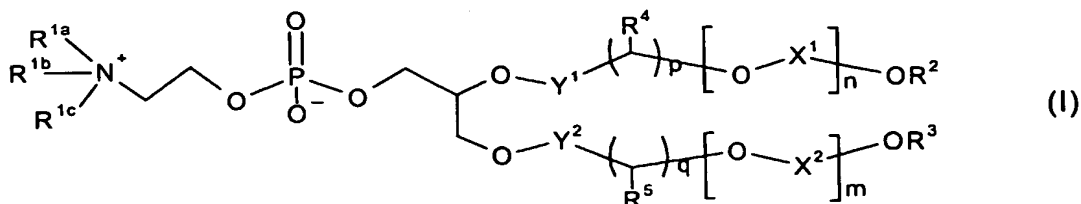


Claims:

1. A compound of formula (I)



or a salt or solvate thereof wherein:

m, n, p and q independently represent an integer 1 to 12;

R^{1a}, R^{1b} and R^{1c} independently represent C₁₋₃ alkyl or hydrogen;

R² and R³ independently represent C₁₋₄ alkyl optionally substituted with up to 5 fluorine atoms or -COC₁₋₂ alkyl optionally substituted with up to 5 fluorine atoms;

R⁴ and R⁵ independently represent -CH₃ or hydrogen.

X¹ and X² independently represent -(CH₂)₂-, -(CH₂)₃-, -CH(CH₃)CH₂-, -CH₂CH(CH₃)-, -CH(CH₃)CH₂CH₂-, -CH₂CH(CH₃)CH₂-, CH₂CH₂CH(CH₃) or -COCH(CH₃)-, and

Y¹ and Y² independently represent -CH₂- or carbonyl;

with the proviso that when:

p and q represent 1;

m and n independently represent an integer between 1 to 12;

R⁴ and R⁵ represent hydrogen;

X¹ and X² represent -(CH₂)₂-; and

Y¹ and Y² represent -CH₂-; then

R² and R³ may only represent C₁₋₂ alkyl optionally substituted with up to 5 fluorine atoms or -COC₁₋₂ alkyl optionally substituted with up to 5 fluorine atoms.

2. A compound of formula (I) according to claim 1, wherein n and m represent an integer 2 to 8.

3. A compound of formula (I) according to claim 1 or claim 2, wherein p and q represent an integer 1 to 6.

4. A compound of formula (I) according to any one of claims 1 to 3, wherein R^{1a} represents methyl.

5. A compound of formula (I) according to any one of claims 1 to 4, wherein R^{1b} represents methyl.

6. A compound of formula (I) according to any one of claims 1 to 5, wherein R^{1c} represents methyl.
7. A compound of formula (I) according to any one of claims 1 to 6, wherein R⁴ and R⁵ represent hydrogen.
- 5 8. A compound of formula (I) according to any one of claims 1 to 7, wherein Y¹ represents carbonyl.
9. A compound of formula (I) according to any one of claims 1 to 8, wherein Y² represents carbonyl.
- 10 10. A compound of formula (I) according to claim 1, wherein
p and q independently represent 1 to 3;
R² and R³ independently represent C₁₋₄ alkyl optionally substituted with up to 5 fluorine atoms or -COC₁₋₂ alkyl optionally substituted with up to 5 fluorine atoms;
R⁴ and R⁵ independently represent hydrogen or -CH₃;
X¹ and X² represent -COCH(CH₃)-; and
15 Y¹ and Y² represent carbonyl.
11. A compound of formula (I) according to claim 1, wherein
p and q independently represent 1 to 3;
R² and R³ independently represent C₁₋₄ alkyl optionally substituted with up to 5 fluorine atoms or -COC₁₋₂ alkyl optionally substituted with up to 5 fluorine atoms;
20 R⁴ and R⁵ independently represent hydrogen or methyl;
X¹ and X² preferably independently represent -(CH₂)₂-, -(CH₂)₃-, -CH(CH₃)CH₂-,
-CH₂CH(CH₃)-, -CH(CH₃)CH₂CH₂-, -CH₂CH(CH₃)CH₂- or CH₂CH₂CH(CH₃)-; and
Y¹ and Y² independently represent -CH₂- or carbonyl.
- 25 12. A pharmaceutical aerosol formulation which comprises particulate medicament, a fluorocarbon or hydrogen-containing chlorofluorocarbon propellant, or mixtures thereof, and a compound of formula (I) according to any one of claims 1 to 11 or a salt or solvate thereof.
13. A pharmaceutical aerosol formulation according to claim 12 wherein the amount of compound of formula (I) employed is in the range 0.5% to 10%w/w, relative to the amount of the medicament.
- 30 14. A pharmaceutical aerosol formulation according to claim 12 or 13 wherein the formulation contains 0.01 to 1.0%w/w of medicament, relative to the total weight of the formulation.
15. A pharmaceutical aerosol formulation according to any one of claims 12 to 14, wherein the propellant is 1,1,1,1,3,3,3-heptafluoro-n-propane or 1,1,1,2-tetrafluoroethane.
- 35 16. A metered dose comprising a formulation according to any one of claims 12 to 15.

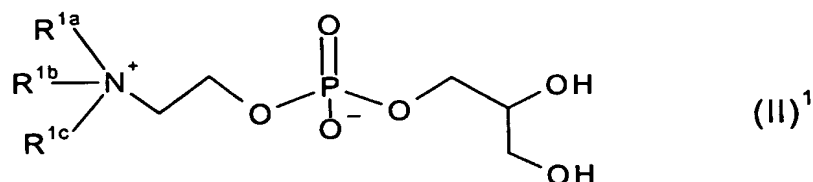
17. Use of a metered dose inhaler according to claim 16 in the treatment of respiratory disorders.

18. Use of a compound of formula (I) according to any one of claims 1 to 11, in a pharmaceutical aerosol formulation.

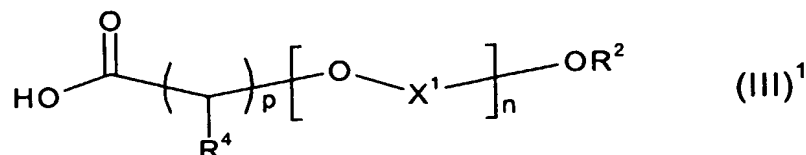
19. Use of a compound of formula (I) according to any one of claims 1 to 11, as a surfactant.

20. A process for preparing a compound of formula (I) which comprises:

(a) preparation of a compound of formula (I) wherein R^2 represents the same as R^3 , R^4 represents the same as R^5 , X^1 represents the same as X^2 , Y^1 and Y^2 represent carbonyl, m represents the same as n and p represents the same as q , by reacting a compound of formula (II)¹

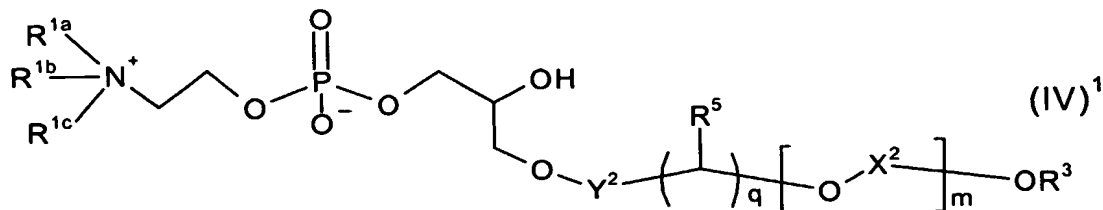


or a salt thereof, wherein R^{1a} , R^{1b} and R^{1c} are as defined above, with a compound of formula (III)¹



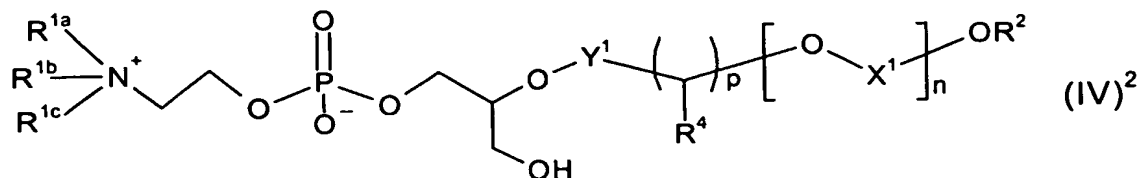
or an activated derivative thereof, wherein R^2 , R^4 , X^1 , n and p are as defined above; or

(b) preparation of a compound of formula (I) wherein Y^1 represents carbonyl which comprises reacting a compound of formula (IV)¹

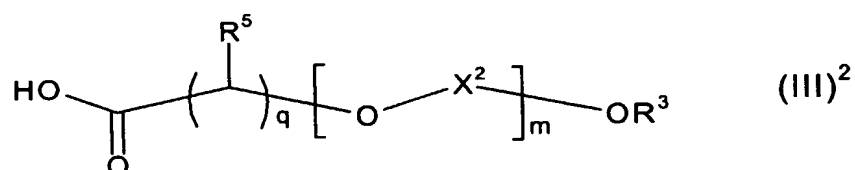


or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^5 , X^2 , Y^2 , m and q are as defined above, with a compound of formula (III)¹ or an activated derivative thereof; or

(c) preparation of a compound of formula (I) wherein Y^2 represents carbonyl which comprises reacting a compound of formula (IV)²

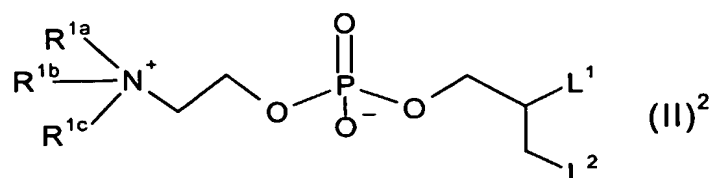


5 or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , X^1 , Y^1 n and p are as defined above with a compound of formula (III)²

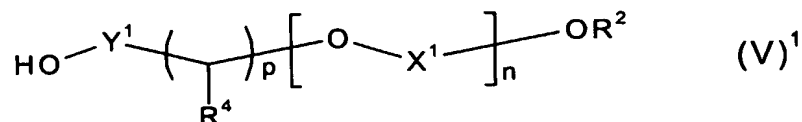


or an activated derivative thereof, wherein R^3 , R^5 , X^2 , m and q are as defined above; or

10 (d) preparation of a compound of formula (I), wherein R^2 represents the same as R^3 , R^4 represents the same as R^5 , X^1 represents the same as X^2 , Y^1 represents the same as Y^2 , m represents the same as n , and p represents the same as q , by reacting a compound of formula (II)²



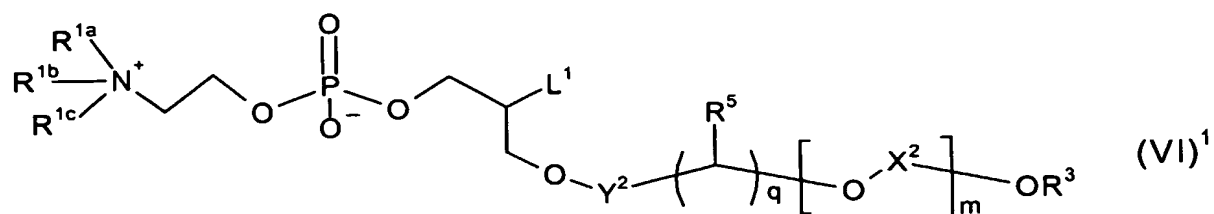
15 wherein R^{1a} , R^{1b} , R^{1c} are as defined above and L^1 and L^2 represent leaving groups with a compound of formula (V)¹



or a salt thereof, wherein R^2 , R^4 , X^1 , Y^1 , n and p are as defined above; or

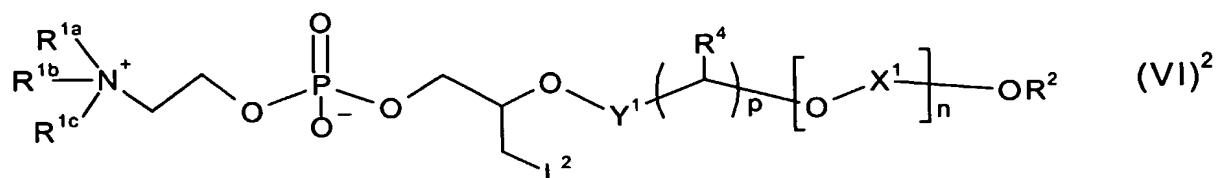
(e) reacting a compound of formula (VI)¹

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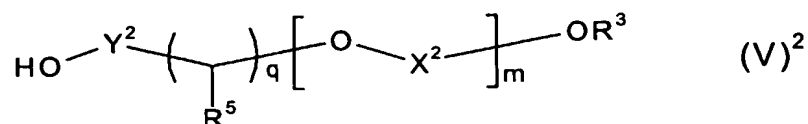


wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^5 , X^2 , Y^2 , m , q and L^1 are as defined above with a compound of formula (V)¹ or a salt thereof; or

5 (f) reacting a compound of formula (VI)²



wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , X^1 , Y^1 , n , p and L^2 are as defined above with a compound of formula (V)²

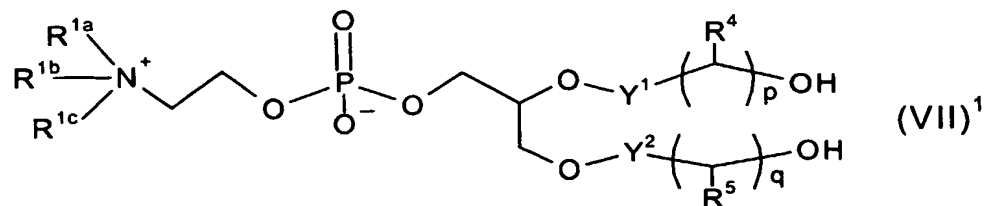


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or a salt thereof, wherein R^3 , R^5 , X^2 , Y^2 , m and q are as defined above; or

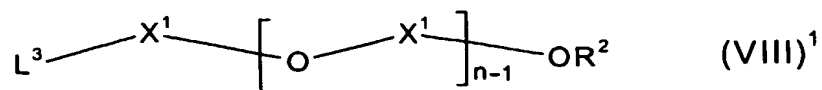
(g) preparing a compound of formula (I), wherein R^2 represents the same as R^3 , X^1 represents the same as X^2 and n represents the same as m , by reacting a compound of formula (VII)¹

15



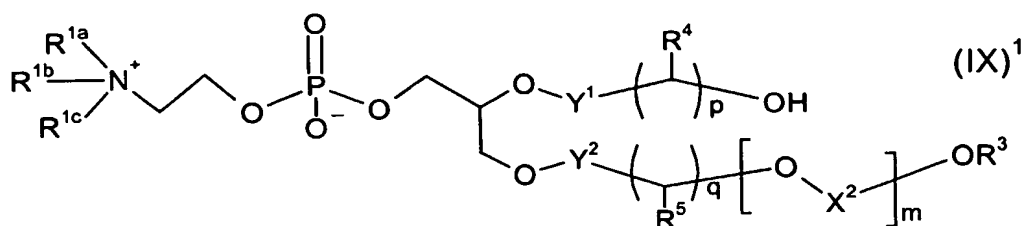
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or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^4 , R^5 , Y^1 , Y^2 , p and q are as defined above with a compound of formula (VIII)¹



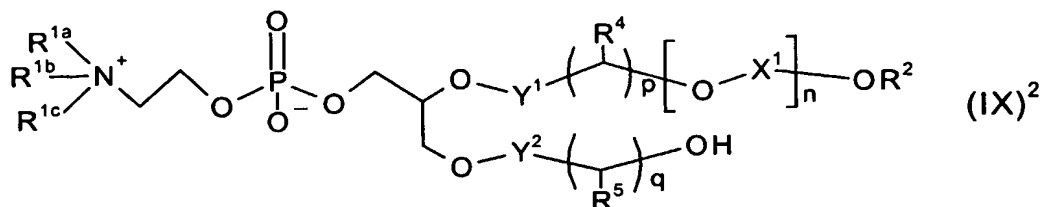
wherein R^2 , X^1 and n are as defined above and L^3 represents a leaving group; or

5 (h) reacting a compound of formula (IX)¹

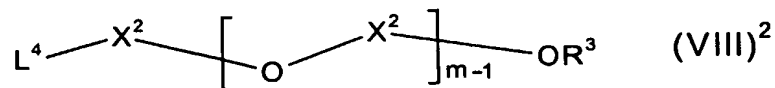


or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^4 , R^5 , X^2 , Y^1 , Y^2 , m , p and q are as defined above with a compound of formula (VIII)¹; or

10 (i) reacting a compound of formula (IX)²



or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , R^5 , X^1 , Y^1 , Y^2 , n , p and q are as defined above with a compound of formula (VIII)²

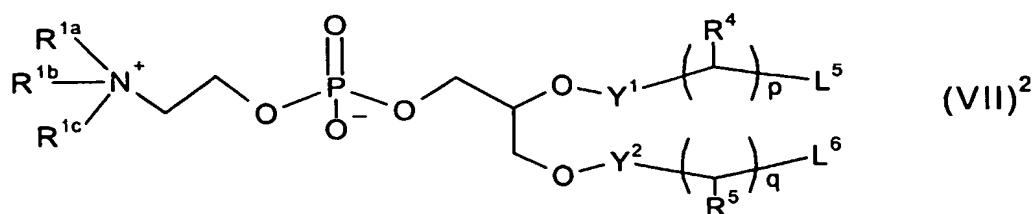


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wherein R^3 , X^2 and m are as defined above and L^4 represents a leaving group; or

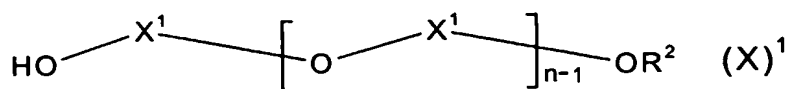
(j) preparing a compound of formula (I) wherein R^2 represents the same as R^3 , X^1 represent the same as X^2 and n represents the same as m by reacting a compound of formula (VII)²

35



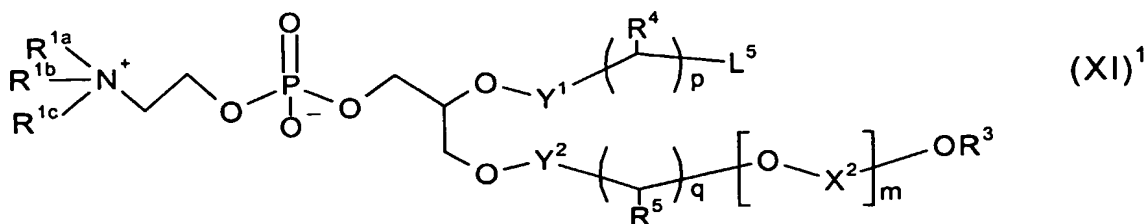
wherein R^{1a} , R^{1b} , R^{1c} , R^4 , R^5 , Y^1 , Y^2 , p and q are as defined above and L^5 and L^6 represent leaving groups, with a compound of formula $(\text{X})^1$

5



or a salt thereof, wherein R^2 , X^1 and n are defined above; or

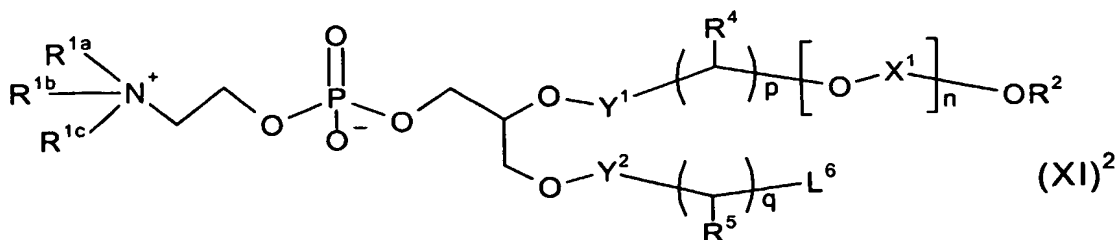
(k) reacting a compound of formula $(\text{XI})^1$



wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^4 , R^5 , X^2 , m , p , q and L^5 are as defined above, with a compound of formula $(\text{X})^1$ or a salt thereof; or

10

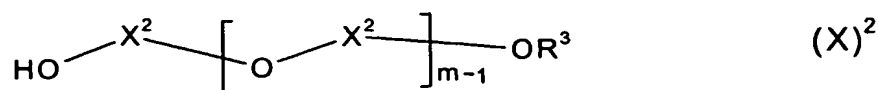
(l) reacting a compound of formula $(\text{XI})^2$



wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , R^5 , X^1 , Y^1 , Y^2 , n , p , q and L^6 are as defined above with a compound of formula $(\text{X})^2$

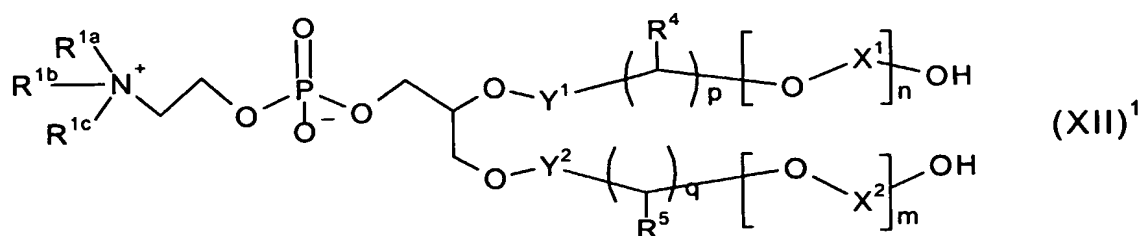
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or a salt thereof, wherein R^3 , X^2 and m are as defined above; or

(m) preparing a compound of formula (I) wherein R^2 represent the same as R^3 , by
 5 reacting a compound of formula (XII)¹.

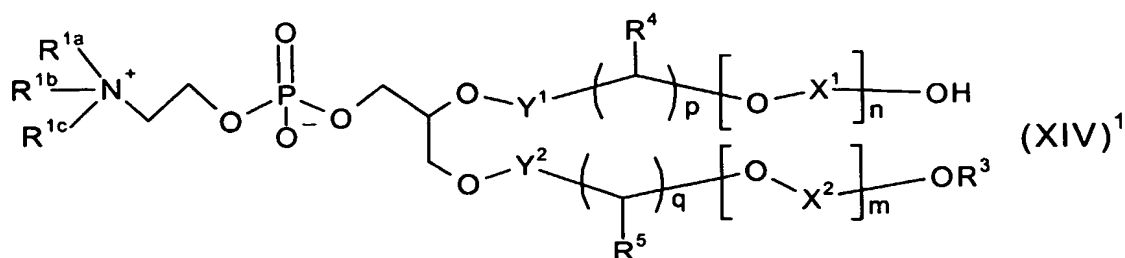


or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above with a compound of formula (XIII)¹



wherein R^2 is as defined above and L^7 is a leaving group; or

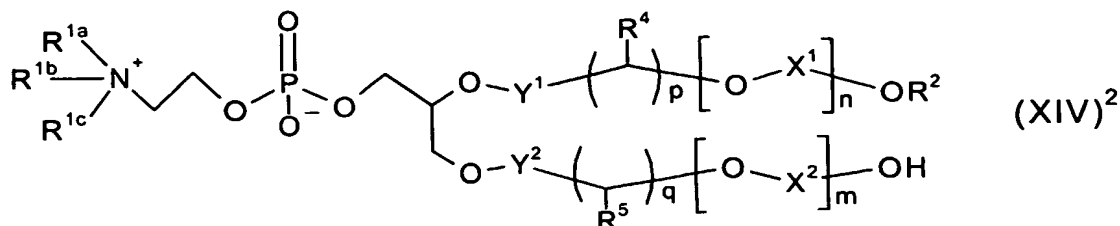
(n) reacting a compound of formula (XIV)¹



or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above with a compound of formula (XIII)¹; or

(o) reacting a compound of formula (XIV)²

37



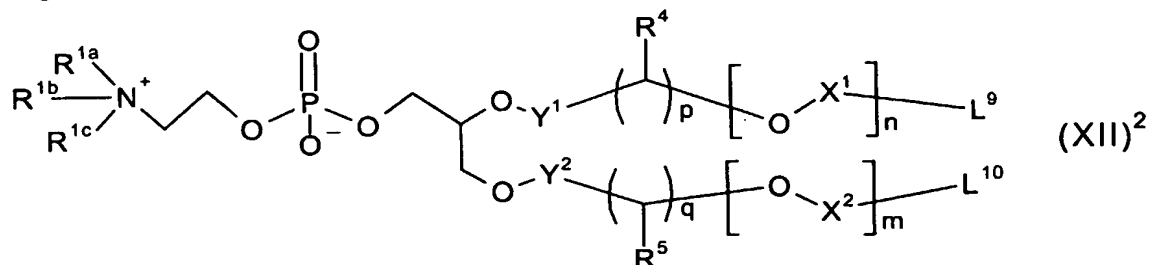
or a salt thereof, wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above with a compound of formula (XIII)²



5

wherein R^3 is as defined above and L^8 represents a leaving group; or

(p) preparing a compound of formula (I) wherein R^2 represent the same as R^3 by reacting a compound of formula (XII)²



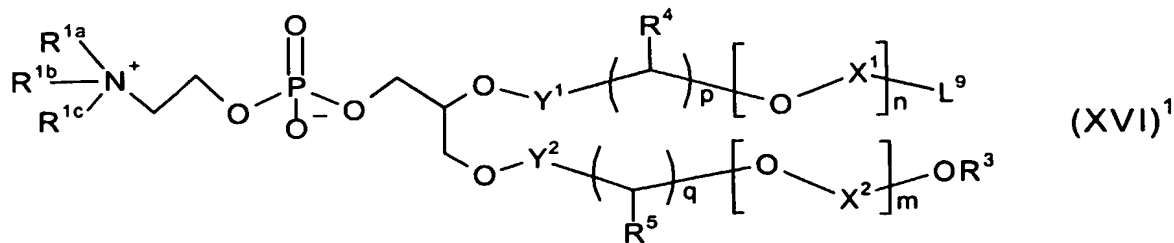
wherein R^{1a} , R^{1b} , R^{1c} , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above and L^9 and L^{10} represent leaving groups, with a compound of formula (XV)¹

10



or a salt thereof, wherein R^2 is as defined above; or

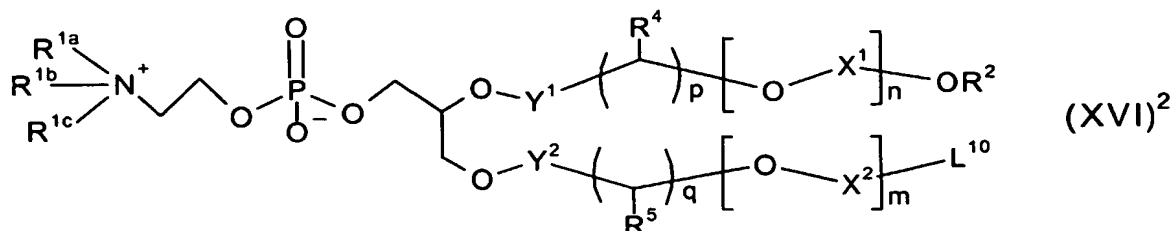
(q) reacting a compound of formula (XVI)¹



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wherein R^{1a} , R^{1b} , R^{1c} , R^3 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p , q and L^9 are as defined above,
 with a compound of formula (XV)¹ or a salt thereof; or
 (r) reacting a compound of formula (XVI)²



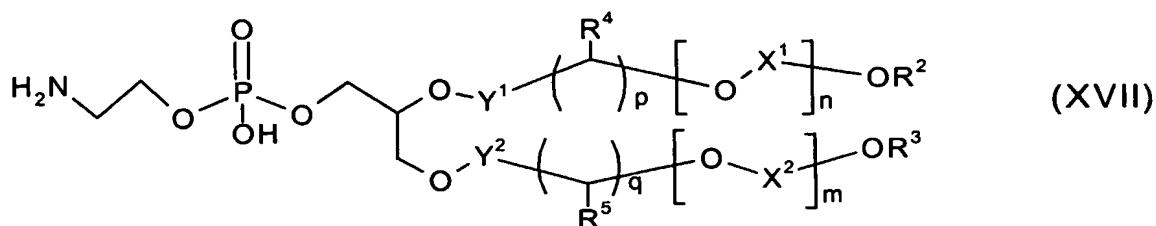
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wherein R^{1a} , R^{1b} , R^{1c} , R^2 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p , q and L^{10} are as defined above,
 with a compound of formula (XV)²



or a salt thereof, wherein R^3 is as defined above; or

10 (s) preparing a compound of formula (I) wherein R^{1a} represents the same as R^{1b} and R^{1c} by reacting a compound of formula (XVII)



wherein R^2 , R^3 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above with a
 compound of formula (XVIII)

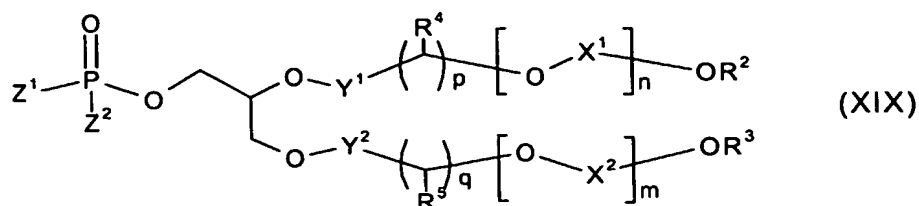
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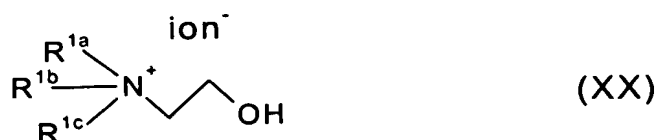
wherein R^{1a} is as defined above and L^{11} represents a leaving group; or

(t) preparing a compound of formula (I) wherein R^2 and R^3 independently represent C_{1-4} alkyl optionally substituted by up to 5 fluorine atoms, by reacting a compound of
 formula (XIX)

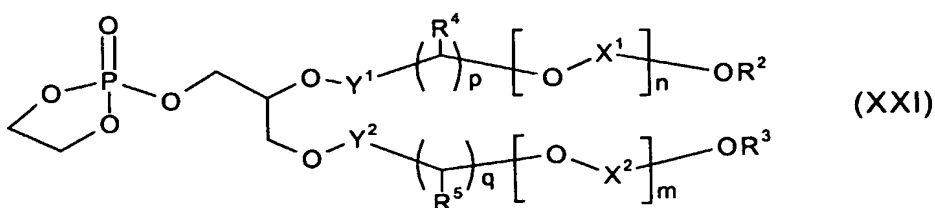
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wherein R² and R³ independently represent C₁₋₄ alkyl optionally substituted with up to 5 fluorine atoms and R⁴, R⁵, X¹, X², Y¹, Y², m, n, p and q are as defined above and Z¹ and Z² represent a halogen with a compound of formula (XX)



wherein R^{1a}, R^{1b} and R^{1c} are as defined above and ion⁻ represents a negative counter ion (e.g. chloro) followed by aqueous work up; or
(u) reacting a compound of formula (XXI)



wherein R^2 , R^3 , R^4 , R^5 , X^1 , X^2 , Y^1 , Y^2 , m , n , p and q are as defined above with a compound of formula (XXII)



or a salt thereof, wherein R^{1a}, R^{1b}, and R^{1c} are as defined above.